



Docket No.: S&ZIO020201

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By: W. H. Stemer

Date: March 17, 2004

UNITED STATES IN THE PATENT AND TRADEMARK OFFICE

Applic. No. : 10/657,926 Confirmation No: 5142
Applicant : Marcus Janke
Filed : September 9, 2003
Title : Device and Method for Performing Operations at a Variable
Speed
Art Unit : 2182
Examiner : to be assigned

Docket No. : S&ZIO020201
Customer No. : 24131

LETTER

Hon. Commissioner for Patents

Sir:

Enclosed please find a copy of the English translation of the International Preliminary Examination Report for the above-identified application. Please enter it into the file.

Respectfully submitted,

W. H. Stemer

For Applicant

WERNER H. STEMER
REG. NO. 34,956

Date: March 17, 2004

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/bmb

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF TRANSMITTAL OF COPIES OF TRANSLATION OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 72.2)

From the INTERNATIONAL BUREAU

To:

SCHOPPE, Fritz
Schoppe, Zimmermann, Stöckeler &
Zinkler
Postfach/P.O. Box 246
82043 Pullach bei München
Germany

| | |
|--|--|
| Date of mailing (day/month/year) 02 February 2004 (02.02.04) | |
| Applicant's or agent's file reference IO020201PCT | IMPORTANT NOTIFICATION |
| International application No. PCT/EP02/01509 | International filing date (day/month/year) 13 February 2002 (13.02.02) |
| Applicant INFINEON TECHNOLOGIES AG et al | |

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

CA,CN,JP,KP,KR,US

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AP,EA,EP,AE,AG,AL,AM,AT,AU,AZ,BA,BB,BG,BR,BY,BZ,CH,CO,CR,CU,CZ,DE,DK,DM,DZ,EC,EE,ES,FI,GB,GD,GE,GH,GM,HR,HU,ID,IL,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,MZ,NO,NZ,OM,PH,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TN,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZM,ZW,OA

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

| | |
|---|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 338.89.75 | Authorized officer A. ZOLTANSKI (Fax : 338 89 75) Telephone No. (41-22) 338 8608 |
|---|---|

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| | | |
|---|---|--|
| Applicant's or agent's file reference IO020201PCT | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/EP2002/001509 | International filing date (day/month/year) 13 February 2002 (13.02.2002) | Priority date (day/month/year) 09 March 2001 (09.03.2001) |
| International Patent Classification (IPC) or national classification and IPC G06F 1/04 | | |
| Applicant INFINEON TECHNOLOGIES AG | | |

| |
|--|
| 1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. |
| 2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>6</u> sheets. |
| 3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application |

| | |
|--|---|
| Date of submission of the demand 09 October 2002 (09.10.2002) | Date of completion of this report 23 May 2003 (23.05.2003) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2002/001509

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1, 3-17, as originally filed
 pages _____, filed with the demand
 pages 2, 2a, 2b, filed with the letter of 09 October 2002 (09.10.2002)
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1-13, filed with the letter of 13 February 2003 (13.02.2003)
- ☒ the drawings:
 pages 1/4-4/4, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 02/01509

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|---------------|-----|
| Novelty (N) | Claims | | YES |
| | Claims | 1-6, 8-11, 13 | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1-13 | NO |
| Industrial applicability (IA) | Claims | 1-13 | YES |
| | Claims | | NO |

2. Citations and explanations

Reference is made to the following documents:

- D1: US-A-5 812 004 (LITTLE WENDELL L), 22 September 1998 (1998-09-22)
- D2: US-A-5 544 138 (BAJOREK CHRISTOPHER H et al.), 6 August 1996 (1996-08-06)
- D3: YOUNG R et al.: "ADAPTIVE CLOCK SPEED CONTROL FOR VARIABLE PROCESSOR LOADING", MOTOROLA TECHNICAL DEVELOPMENTS, MOTOROLA INC., SCHAUMBURG, ILLINOIS, US, Vol. 15, 1 May 1992 (1992-05-01), pages 43-44, XP000306138

1. The application fails to meet the requirement of PCT Article 33(2) because the subject matter of Claim 1 is not novel. All the features of Claim 1 are disclosed in document D2.

| Features of Claim 1 | Corresponding features in D2 |
|---|------------------------------|
| Processor with the following features: | Figure 1 |
| an arithmetic unit for executing an operation at a certain speed; | Figure 3 (50): controller |

| | |
|---|---|
| a condition device that displays a condition and is designed | Figure 1 (28): the "energy monitor" corresponds to the condition device. Figure 2: the "operating mode" corresponds to the condition in Claim 1. |
| to cause, upon execution of an operation by the arithmetic unit, an increase in a variable which can indicate the condition of the condition device | Column 6, lines 44-48: the "controller comparison" (= execution of an operation by the arithmetic unit) causes a change (which may be an increase) in the "operating mode" (= condition). |
| and to reduce the speed of the arithmetic unit in response to the increase in the variable upon execution of the operation. | Figure 2: when the "operating mode" variable is increased from 0 to 1 the clock rate (= speed) of the processor is reduced. |

In the letter of 13 February 2003 the applicant relates the feature "execution of an operation" in Claim 1 to the activity of the disk drive, and maintains that this establishes the novelty of Claim 1.

However, the examiner relates the feature "execution of an operation by the arithmetic unit" to the operations in controller (50) (Figure 3 in D2), which compares energy values and thus determines the operating mode. If these operations detect a low level of energy consumption, the condition of the operating mode is increased (e.g. from 0 to 1), thereby reducing the clock rate or speed. This corresponds exactly to the features defined in Claim 1.

4. Claim 13 defines method features that correspond to

the processor features of Claim 1. The objections raised in connection with Claim 1 therefore also apply to Claim 13.

3. Dependent Claims 2-12 do not appear to contain any features that meet the PCT requirements in respect of novelty and inventive step when combined with the features of any of the back-referenced claims. The reasons for this are as follows:
 - 3.1 Claim 2 defines continuous conditions. D2 discloses (for example) the monitoring of continuous temperature values (see Figure 5).
 - 3.2 Claim 3 defines the condition as a function of time. D2 discloses the measuring of energy consumption over time and the selecting of a suitable mode (see Figure 10 and column 4, lines 8-14).
 - 3.3 The features of Claim 4 are also disclosed in D2. If there is no activity (see Figure 6B), the temperature falls and a power-saving mode is selected. This condition contrasts with the "full power operation" used when executing calculation operations.
 - 3.4 The additional features of Claim 5 are also known from D2 (see Figure 2). The higher the operating mode variable, the slower the arithmetic unit becomes (see Figure 2; low frequency in mode 1, no power in mode 3).
 - 3.5 Claim 6 defines an inverse exponential dependence of speed on condition. In D2 there is a special component which applies an exponential factor to allow for the ageing of the components in the energy consumption analysis (column 10, line 19).

- 3.6 The features of the capacitor in Claim 7 are known from document D1 (see Figure 5, "resistor 64", and Figure 11, C)). The combination of D1 and D2 would be obvious to a person skilled in the art.
- 3.7 Claim 8 defines a heat capacity and the temperature as a condition variable. D2 discloses a suitable thermocouple (see Figure 5, (62)).
- 3.8 D2 also discloses the feature of two temperature values (see Figure 5), as defined in Claim 9.
- 3.9 The feature "frequency of a duty cycle" in Claim 10 is explicitly disclosed in D2 (see Figure 2). It is noted that the relationship between duty cycle and speed is always implicitly disclosed.
- 3.10 The features of Claim 11 are known from D2. Figure 3 shows an energy register (46) with a number of bits, which correspond to an energy condition and influence the arithmetic unit via the controller (50).
- 3.11 The use of a processor for cryptographic operations, as defined in Claim 12, is disclosed in D1 (see column 2, lines 4-12, and Figures 1 and 2).